

**FACT SHEET FOR NPDES PERMIT NO. WA0040029**  
**ALLWEATHER WOOD TREATERS**

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## INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act (the Act) is the National Pollutant Discharge Elimination System of permits (NPDES), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the state include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC), and sediment management standards (Chapter 173-204 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit. One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

The fact sheet and draft permit have been reviewed by the Permittee. Errors and omissions identified in this review have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Comments and the resultant changes to the permit will be summarized in Appendix D--Response to Comments.

GENERAL INFORMATION	
Facility Name and Address:	Allweather Wood Treaters 725 South 32 <sup>nd</sup> Street Washougal, WA 98671
Type of Facility:	Pressure Wood Treating
Discharge Location:	Waterbody name: Columbia River via Gibbons Creek Outfall 001: Latitude: 45° 34' 16" N      Longitude: 122° 20' 07" W Outfall 002: Latitude: 45° 34' 15" N      Longitude: 122° 20' 23" W  Alternative outfall: Direct to the Columbia River (read the fact sheet for an explanation)  Outfall 003: Latitude: 45° 34' 15" N      Longitude: 122° 20' 40" W
Water Body ID Number:	WA-CR-1010

## BACKGROUND INFORMATION

### DESCRIPTION OF THE FACILITY

#### HISTORY

Allweather Wood Treaters (Allweather) is owned and operated by Evergreen Forest Products Inc. of Washougal in the state of Washington. The facility began its initial operation in fall of 1984. The entire facility (approximately 8.3 acres of drainage area) is paved, including the processing area, tank farm and treated product storage area. The processing area, tank farm, and part of the treated and untreated wood storage area are also covered. Allweather produces one type of treated wood: 1) chromated copper arsenate (CCA) treated wood for building projects that require rot and insect resistant wood.

The site is located approximately one-eighth of a mile south of Lewis and Clark Highway, between 32nd and 28th street in the Camas/Washougal Industrial Park in Washougal. The Industrial Park itself is adjacent to the Steigerwald Lake National Wildlife Refuge.

#### INDUSTRIAL PROCESS

At Allweather, lumber is pressure treated with water-based formulations as discussed below. Wood is conditioned in separate drying kilns to reduce the moisture content of the wood prior to treatment in retorts. Dedicated forklifts are used in the retort area to minimize the tracking of chemicals off the drip pad. Treated lumber is stored both in covered and uncovered areas. The retort and the tank farm area is fully contained and covered. The floor is concrete and sloped to increase dripping from bundled lumber. There are four sumps in the process area that collect and transfer drips and spills of treating solution to the main collection sump for recycle back into process water. Each sump is provided with a float controlled pump. Any residue collected in the sump is handled as a dangerous waste.

Allweather uses a water-based treating solution. OSMOSE® K-33 brand wood preservative, a chromated copper arsenate (CCA) type "C" formulation, is delivered to the facility as a 50 percent liquid concentrate. The active ingredients of hexavalent chromium as  $\text{CrO}_2$  (47.5 percent), Copper as  $\text{CuO}$  (18.5 percent), and Arsenic as  $\text{As}_2\text{O}_5$  (34 percent). An estimated 1243-4283 pounds of chemical (dry weight) may be consumed daily for a target production of 18-30 million board feet of product a year. A water-based dye is sometimes added to the K-33 solution prior to application to give a reddish-brown coloration to the wood. The dye is supplied as a 52 percent aqueous solution in 5-gallon buckets. The maximum daily consumption is estimated at 100 pounds.

#### DISCHARGE OUTFALL

Allweather presently discharges storm water through two outfalls into the Gibbons Creek remnant channel. If Allweather continues to use the present outfalls, then the discharge will be required to meet water quality standards at the end of pipe before discharging to Gibbons Creek.

Another discharge option involves sharing an outfall with Exterior Wood, Inc. (Exterior), which has installed a new outfall directly to the Columbia River, and has designed the new outfall to accommodate the combined storm water discharge from both facilities. The fact sheet and draft permit will evaluate both discharge options.

In addition to the two existing outfall options, Allweather has discussed pursuing a new outfall to the Columbia River. Allweather can evaluate any potential discharge option but the draft permit has a 19 month time specified to either comply with water quality standards in Gibbons Creek, connect to the existing outfall used by Exterior, or another option to meet the proposed limitations.

### Existing Outfalls to Gibbons Creek

The existing outfalls are designated 001 and 002. Allweather discharges storm water through these two outfalls to Port of Washougal storm sewers on 32nd and 28th streets, respectively. These storm sewer lines drain into the Gibbons Creek remnant channel north of the Industrial Park. The flow in the Creek is generally westward draining into the Columbia River via the Port-operated lift station at a tide gate. A mixing zone can not be granted for the Gibbons Creek remnant channel.

### Proposed New Outfall

Another outfall option for Allweather is to proceed with the plan to share an outfall with Exterior. The two companies submitted a joint engineering report, approved by The Department on September 5, 1997, for the combined outfall. Exterior constructed the outfall and is discharging site storm water through it to the Columbia River. The new outfall is designed to accommodate the combined storm water discharge from Exterior and Allweather.

Allweather has not constructed its connection to the combined outfall but is presently proposing to test a developmental storm water treatment system. Initial trials with the developmental storm water treatment system indicate that it is capable of meeting the low levels required to meet the water quality standards, but it is not in widespread use for the treatment of storm water. If the pilot test results indicate the effluent will not meet permit limitations, then Allweather will have to discharge storm water to the Columbia River. Allweather may have the option to connect to the existing outfall planned with Exterior. Allweather may have to pursue a new outfall to the Columbia River, if Exterior's outfall is not available.

### PERMIT STATUS

The previous permit for this facility was issued on June 30, 1993. The permit was modified in August 1996 to extend the deadline for complying with the final limitations for copper and chromium from June 30, 1996 through the duration of the permit. An application for permit renewal was submitted to the Department on December 22, 1997, and accepted by the Department on July 2, 1998. Allweather was notified at the time of application acceptance that the expiring permit would remain in effect while the Department completes the process of replacing the permit. Allweather has stated to The Department that they "elected to wait until the new draft permit was issued in order to evaluate the conditions of the permit prior to connecting to the Columbia River."

The previous permit placed effluent limitations on oil and grease, arsenic, chromium, copper, and pH. The interim and final limitations are listed below in Table 1.

**Table 1: Effluent Limitations in Expiring Permit**

Parameter	Final Daily Maximum	Interim Daily Maximum
Oil and Grease (mg/L)	10	---
Arsenic, Total (µg/L)	360	---
Chromium, Total (µg/L)	16	1030
Copper, Total (µg/L)	18	540
pH (Standard Units)	between 6 to 9	---

### SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received a compliance inspection on April 23, 1998. During the history of the previous permit, the Permittee has remained in substantial compliance based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

### STORM WATER CHARACTERIZATION

The storm water discharge is characterized for the parameters listed in Table 2. The values in Table 2 have been taken from the DMRs and the permit application for the facility.

**Table 2: Storm Water Characterization**

Parameter	Average Value or Range		Maximum Value	
	Outfall 001	Outfall 002	Outfall 001	Outfall 002
Oil and Grease (mg/L)	ND <sup>1</sup>	ND <sup>1</sup>	1.7	7
Arsenic, Total (µg/L)	191	139	704	325
Chromium, Total (µg/L)	319	131	768	474
Copper, Total (µg/L)	149	95	419	278
TSS (mg/L)	32	32	225	89
pH (Standard Units)	5.12 – 7.12	6.03 – 6.83	N/A	N/A

<sup>1</sup>ND = Non-Detectable. Oil and grease is usually not present in the storm water at levels above 1 mg/L.

### PROPOSED PERMIT LIMITATIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. Technology-based limitations are based upon the treatment methods available to treat specific pollutants. Technology-based limitations are set by regulation or developed on a case-by-case basis (40 CFR 125.3, and Chapter 173-220 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC), Sediment Quality Standards (Chapter 173-204 WAC) or the National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992). The more stringent of these two limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

Washington state law requires that pollutants receive all known, available, and reasonable methods of prevention, control and treatment (AKART) prior to being discharged to the environment. The Department interprets AKART to be synonymous with technology-based standards.

The limitations in this permit are based in part on information received in the application. The effluent constituents in the application were evaluated on a technology- and water quality-basis. The limits necessary to meet the rules and regulations of the state of Washington were determined and included in this permit. The Department does not develop effluent limits for all pollutants that may be reported on the application as present in the effluent. Some pollutants are not treatable at the concentrations reported, are not controllable at the source, are not listed in regulation, or do not have a reasonable potential to cause a water quality violation. If significant changes occur in any constituent, as described in 40 CFR 122.42(a), the Permittee is required to notify the Department.

### TECHNOLOGY-BASED EFFLUENT LIMITATIONS

The United States Environmental Protection Agency (USEPA) promulgated categorical guidelines for process wastewater from the wood treating industry under 40 CFR part 429. The categorical guidelines prohibit the discharge of any process wastewater, and explicitly exempted storm water from the definition

of process wastewater. Allweather does not discharge any process wastewater, thus meeting the technology-based limitations for pollutants from process wastewater.

There are no federally promulgated guidelines for pollutants in storm water from wood treating facilities. However, the Department must make a determination that AKART has been met for the pollutants in the storm water from Allweather's wood treating facility. To make this determination, the Department evaluated the information provided in an engineering report submitted by Exterior and Allweather titled *Stormwater Facilities Evaluation and Mixing Zone Study*. Allweather evaluated the feasibility of using physical-chemical treatment to remove metals from the storm water, and continue to discharge to the Gibbons Creek remnant channel. The capital and maintenance costs for a standard physical/chemical treatment system were not reasonable compared to constructing an outfall to the Columbia River.

Allweather submitted a letter to The Department, dated August 8, 1999, presenting bench scale test of storm water treatment. Four different suppliers of equipment tested the storm water and provided test results. Allweather chose one company to do an onsite pilot test. If Allweather wishes to continue discharging to the Gibbons Creek remnant channel, then a treatment system will have to be installed.

Allweather has diligently implemented a number of best management practices (BMPs) which have reduced the exposure of treated lumber to precipitation, reduced the potential for tracking of treatment chemicals off the "drip pad", and reduced the amount of suspended solids in the storm water runoff. The operational BMPs specified in the engineering report *Stormwater Facilities Evaluation and Mixing Zone Study* follow:

- Separate material handling equipment is used for treated and untreated wood so that equipment coming into contact with the drip pad stays on the drip pad.
- Treated units of lumber are "shed wrapped" or completely wrapped to minimize exposure of treated lumber to the precipitation.
- Frequent maintenance of catch basins to reduce exposure of runoff to contaminated sediments.
- Treatment of lumber in accordance with process practices that increases the fixing of the treating chemicals in the wood and reduces potential contamination of storm water.
- Storage and maintenance of trams so the trams do not contact storm water.
- Sweeping the facility on a regular basis to remove potential contaminated particles from the pavement.

These BMPs are included in the permit as Permit Condition S.4.B.

The BMPs have successfully lowered the average concentration of copper by 42 percent, chromium by 72 percent, and arsenic by 40 percent since their implementation. The Department has made a determination that full implementation of the BMPs satisfies the AKART requirement for metals.

When specific technology-based effluent limitations have not been promulgated, as is the case for pollutants in storm water from wood treating sites, the Department must develop effluent limitations on a case-by-case basis using Best Professional Judgement (BPJ). The Department is directed to develop BPJ limitations under Section 402(a)(1)(B) of the Act. To this end, the Department is proposing the following storm water effluent limitations based on BPJ (see Table 3). BPJ limitations are set to insure that AKART continues to be met.

The Department had already placed technology-based limitations for oil and grease in the last permit. A discharge limitation of 10 mg/L was set for oil and grease.



The expiring permit required Allweather to submit a site-specific engineering report evaluating the treatment options for the control of total suspended solids (TSS) in storm water runoff. The Department has made a determination that full implementation of the BMPs satisfies the AKART requirement for TSS.

The Department considered the last 31 months (January 1996 to May 1999) of storm water monitoring data in its determination of BPJ effluent limitations for metals and TSS. The 31 months of data represent a period of time that all of the BMPs have been in place. The Department believes that storm water limitations based on the 99th percentile of the data set for each pollutant is a reasonable standard by which to ensure the continued use of the BMPs by Allweather. Any individual data points that were more than three (3x) standard deviations away from the mean were not used to calculate the 99<sup>th</sup>-percentile.

**Table 3: BPJ Effluent Limitations for the Existing Outfalls 001 and 002**

Parameter, (units)	Average Value or Range		99th percentile		Proposed Limitations	
	Outfall 001	Outfall 002	Outfall 001	Outfall 002	Outfall 001	Outfall 002
Oil & Grease, (mg/L)	ND <sup>1</sup>	ND <sup>1</sup>	N/A	N/A	10	10
Arsenic, (µg/L)	191	139	338	337	340	340
Chromium, (µg/L)	319	131	765	464	770	460
Copper, (µg/L)	149	95	282	235	280	240
TSS, (mg/L)	32	32	78	84	80	80
pH, (Standard Units)	5.12 – 7.12	6.03 – 6.83	N/A	N/A	6 – 9	6 – 9

<sup>1</sup>ND = Non-Detectable. Oil and grease is usually not present in the storm water at levels above 1 mg/L.

The limitations proposed in Table 3 are technology-based, and are therefore the minimum standards that Allweather must meet for discharge to outfalls 001 and 002. These limitations will be imposed on outfalls 001 and 002 as interim standards if the water quality-based standards (developed in the next section) can not be met immediately. If the permit has interim standards, then permit will also specify a compliance schedule to comply with the final limitations.

The proposed limitations for the single outfall will reflect the fact that the two existing outfalls 001 and 002 will be combined into a single outfall. This new outfall will be designated 001 if discharging to Gibbons Creek or 003 if discharging directly to the Columbia River. The limitations in Table 3 will form the basis for the limitations on outfall 001 or 003. The two flows from the existing outfalls are related by the ratio of 1.07, with outfall 002 having the larger drainage area compared to 001.

**Table 4: BPJ Effluent Limitations for the Proposed New One Outfall, 001 or 003**

Parameter, (units)	Proposed Limitations Outfall 003
Oil & Grease, (mg/L)	10
Arsenic, (µg/L)	340
Chromium, (µg/L)	605
Copper, (µg/L)	254
TSS, (mg/L)	80
pH, (Standard Units)	6 – 9

#### *SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS*

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state. Surface water quality-based effluent limitations may be based on an individual waste load allocation (WLA) or on a WLA developed during a basin wide total maximum daily loading study (TMDL).

#### NUMERICAL CRITERIA FOR THE PROTECTION OF AQUATIC LIFE

"Numerical" water quality criteria are numerical values set forth in the State of Washington's Water Quality Standards for Surface Waters (Chapter 173-201A WAC). They specify the levels of pollutants allowed in a receiving water while remaining protective of aquatic life. Numerical criteria set forth in the Water Quality Standards are used along with chemical and physical data for the wastewater and receiving water to derive the effluent limits in the discharge permit. When surface water quality-based limits are more stringent or potentially more stringent than technology-based limitations, they must be used in a permit.

#### NUMERICAL CRITERIA FOR THE PROTECTION OF HUMAN HEALTH

The U.S. EPA has promulgated 91 numeric water quality criteria for the protection of human health that are applicable to Washington state (EPA 1992). These criteria are designed to protect humans from cancer and other disease and are primarily applicable to fish and shellfish consumption and drinking water from surface waters.

#### NARRATIVE CRITERIA

In addition to numerical criteria, "narrative" water quality criteria (WAC 173-201A-030) limit toxic, radioactive, or deleterious material concentrations below those which have the potential to adversely affect characteristic water uses, cause acute or chronic toxicity to biota, impair aesthetic values, or adversely affect human health. Narrative criteria protect the specific beneficial uses of all fresh (WAC 173-201A-130) and marine (WAC 173-201A-140) waters in the state of Washington.

#### ANTIDegradation

The State of Washington's Antidegradation Policy requires that discharges into a receiving water shall not further degrade the existing water quality of the water body. In cases where the natural conditions of a receiving water are of lower quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. Similarly, when the natural conditions of a receiving water are of higher quality than the criteria assigned, the natural conditions shall constitute the water quality criteria. More information on the State Antidegradation Policy can be obtained by referring to WAC 173-201A-070.

The Department has reviewed existing records and was able to determine that ambient water quality is higher than the designated classification criteria given in Chapter 173-201A WAC for the pollutants of concern. The discharge authorized by this proposed permit should not cause a loss of beneficial uses, or measurable degradation of the existing water quality for arsenic, chromium, or copper.

#### CRITICAL CONDITIONS

Surface water quality-based limits are derived for the water body's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

The critical condition for the Columbia River and Gibbons Creek is the seven-day average low river flow with a recurrence interval of ten years (7Q10), which occurs during the summer dry season. This low flow condition was used in the dilution modeling for the Columbia River discharge (outfall 003) to set the conditions in the river at the time the maximum amount of storm water is being discharged. (There will be no dilution zone allowed in Gibbons Creek.) However, the end of summer is not the time of year that the maximum amount of storm water is discharged from the Allweather facility. The "worst case" conditions of 7Q10 low flow in the Columbia River and maximum storm water discharge do not happen the same time of the year. There is much more flow in the river during the time of maximum storm water discharge from Allweather. This means that the dilution modeling done for this permit is very conservative.

#### MIXING ZONES

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention, control and treatment (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100.

The National Toxics Rule (EPA, 1992) allows the chronic mixing zone to be used to meet human health criteria. There is no mixing zone granted for the discharge to Gibbons Creek remnant channel. A mixing zone is granted for the Columbia River outfall.

#### DESCRIPTION OF THE RECEIVING WATER

The facility discharges to Columbia River, which is designated as a Class A fresh water body. Other nearby point source outfalls include the City of Washougal Publicly Owned Treatment Plant and Pendleton Woolen Mills Industrial Wastewater Treatment Plant. Significant nearby non-point sources of pollutants include Gibbons Creek remnant channel with its sources of industrial and municipal storm

water and the Pendleton Woolen Mills Industrial Sludge Land Application Site. Characteristic uses include the following:

Class A (Excellent) water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation. Water quality of this class shall meet or exceed the requirements for all or substantially all uses.

#### SURFACE WATER QUALITY CRITERIA

Applicable criteria are defined in Chapter 173-201A WAC for aquatic biota. In addition, U.S. EPA has promulgated human health criteria for toxic pollutants (EPA 1992). Water quality criteria for the Columbia River at the point of this discharge are summarized below:

**Table 5: Water Quality Criteria**

<u>Parameter</u>	<u>Criteria</u>
pH	6.5 to 8.5 standard units
Arsenic	360 µg/L (acute criteria)
Chromium (hexavalent)	16 µg/L (acute criteria)
Chromium (trivalent)	3,710 µg/L (acute criteria)
Copper	18 µg/L (acute criteria)
Other toxics	No toxics in toxic amounts

#### CONSIDERATION OF SURFACE WATER QUALITY-BASED LIMITS FOR NUMERIC CRITERIA

Pollutant concentrations in the proposed discharge will still exceed water quality criteria after applying technology-based controls. The Department has made a determination that the technology-based controls in use by Allweather do satisfy the requirements for AKART. In order to meet the water quality criteria, a mixing zone can be authorized in accordance with the geometric configuration, flow restriction, and other restrictions for mixing zones (See Chapter 173-201A WAC) and are defined as follows:

The acute dilution factor of effluent to receiving water that occur within the mixing zone have been determined at the critical condition by the use of PLUMES, a dilution model developed by the USEPA. The acute dilution factor has been determined to be:

**Table 6: Dilution Factors Applicable to the Discharge to the Columbia River – Outfall 003**

	Acute	Chronic
Aquatic Life	90	N/A
Human Health, Carcinogen	N/A	N/A
Human Health, Non-carcinogen	N/A	N/A

Pollutants in an effluent may affect the aquatic environment near the point of discharge (near field) or at a considerable distance from the point of discharge (far field). Toxic pollutants, for example, are near-field pollutants--their adverse effects diminish rapidly with mixing in the receiving water. Conversely, a pollutant such as BOD is a far-field pollutant whose adverse effect occurs away from the discharge even

after dilution has occurred. Thus, the method of calculating surface water quality-based effluent limits varies with the point at which the pollutant has its maximum effect.

The derivation of surface water quality-based limits also takes into account the variability of the pollutant concentrations in both the effluent and the receiving water.

The ambient background data used for this permit includes the following from Ambient Water Quality Data, prepared for the Cities of Camas, Washougal, and Kalama by Cosmopolitan Engineering Group, 1996:

**Table 7: Ambient Conditions in the Columbia River at the Critical Condition**

Parameter	Value used
7Q10 low flow	100,000 cubic feet per second (cfs)
Velocity (7Q10)	1.2 ft/sec
30Q5 (November)	120,000 cfs
Velocity (30Q5)	2.4 ft/sec
Depth	17 feet
No. of diffusers	12 (4-inch diameter Red Valve™ Tideflex)
Temperature (summer)	17.6 °C
pH (high)	8.0
Hardness	63 mg/L as CaCO <sub>3</sub>
Arsenic (total)	0.87 µg/L
Chromium (hexavalent)	0.13 µg/L (assumed total recoverable is all hexavalent)
Chromium (trivalent)	0.13 µg/L (assumed total recoverable is all trivalent)
Copper (total)	1.1 µg/L

The impacts of metals in the storm water were determined as shown below, using the dilution factors at critical conditions described above.

Federal regulations (40 CFR 122.44) require NPDES permits to contain effluent limits for toxic chemicals in an effluent whenever there is a reasonable potential for those chemicals to exceed the surface water quality criteria. This process occurs concurrently with the derivation of technology-based effluent limits. Facilities with technology-based effluent limits defined in regulation are not exempted from meeting the Water Quality Standards for Surface Waters or from having surface water quality-based effluent limits.

The following toxics were determined to be present in the discharge: arsenic, chromium, and copper. A reasonable potential analysis (See Appendix C) was conducted for these parameters to determine whether or not effluent limitations would be required in this permit. The determination of the reasonable potential for arsenic, chromium, and copper to exceed the water quality criteria was evaluated with procedures given in EPA, 1991 (Appendix C) at the critical condition. Valid ambient background data was available for arsenic, chromium, and copper.

### **Columbia River Discharge – Outfall 003**

Calculations using all applicable data resulted in a determination that there is no reasonable potential for this discharge to cause a violation of water quality standards for the proposed discharge to the Columbia River. This determination assumes that the Permittee meets the technology-based effluent limitations of the proposed permit.

### Existing Discharge – Outfalls 001 and 002

Water quality-based effluent limitations were derived for arsenic, chromium, and copper, which were determined to have a reasonable potential to cause a violation of the copper, chromium, and aquatic species-based arsenic water quality standards. Effluent limits were calculated using methods from EPA, 1991 as shown in Appendix C.

The resultant effluent limitations are as follows:

**Table 8: Water Quality-Based Limitations for Outfalls 001 and 002**

Parameter, (units)	Existing Final Limitations		Dilution Factor	Proposed Limitations When Accounted for Dilution in the City Storm Sewers
	Outfall 001	Outfall 002		
Arsenic, (µg/L)	360	360		
Chromium, (µg/L)	16	16	3	48
Copper, (µg/L)	18	18	2	36

The permit contains a compliance schedule for meeting the water quality-based limits for chromium and copper for the discharge to Gibbons Creek. The water quality-based limitation for arsenic is already being met.

The permit contains interim limits for chromium and copper as required by Chapter 173-201A WAC. The limits are based on existing demonstrated performance. The interim limitations will be the technology-based limitations given in Table 3.

Water quality criteria for metals in Chapter 173-201A WAC are based on the dissolved fraction of the metal. The Permittee may provide data clearly demonstrating the seasonal partitioning of the dissolved metal in the ambient water in relation to an effluent discharge. Metals criteria may be adjusted on a site-specific basis when data is available clearly demonstrating the seasonal partitioning in the ambient water in relation to an effluent discharge.

Metals criteria may also be adjusted using the water effects ratio approach established by USEPA, as generally guided by the procedures in USEPA Water Quality Standards Handbook, December 1983, as supplemented or replaced.

### WHOLE EFFLUENT TOXICITY

The Water Quality Standards for Surface Waters require that the effluent not cause toxic effects in the receiving waters. Many toxic pollutants cannot be detected by commonly available detection methods. However, toxicity can be measured directly by exposing living organisms to the wastewater in laboratory tests and measuring the response of the organisms. Toxicity tests measure the aggregate toxicity of the whole effluent, and therefore this approach is called whole effluent toxicity (WET) testing. Some WET tests measure acute toxicity and other WET tests measure chronic toxicity.

Acute toxicity tests measure mortality as the significant response to the toxicity of the effluent. Dischargers who monitor their wastewater with acute toxicity tests are providing an indication of the potential lethal effect of the effluent to organisms in the receiving environment.

Chronic toxicity tests measure various sub-lethal toxic responses such as retarded growth or reduced reproduction. Chronic toxicity tests often involve either a complete life cycle test of an organism with an extremely short life cycle or a partial life cycle test on a critical stage of one of a test organism's life cycles. Organism survival is also measured in some chronic toxicity tests. The Department has determined that chronic toxicity testing will not be required for storm water discharges from wood treating sites.

In accordance with WAC 173-205-040, the Permittee's effluent has been determined to have the potential to contain toxic chemicals. The proposed permit contains requirements for whole effluent toxicity testing as authorized by RCW 90.48.520 and 40 CFR 122.44 and in accordance with procedures in Chapter 173-205 WAC. The proposed permit requires the Permittee to conduct toxicity testing for one year in order to characterize the acute toxicity of the effluent. However, the toxicity testing will not begin until a new treatment system is permanently installed, or when Allweather begins discharging through outfall 003.

Special Condition S7. of the permit delays effluent characterization for WET until the completion or startup of the new wastewater facility required in Special Condition S.10. WAC 173-205-030(4) allows the Department to delay effluent characterization for WET for existing facilities that are under a compliance schedule in a permit to implement technology-based controls or to achieve compliance with surface water quality-based effluent limits.

If acute toxicity is measured during effluent characterization at levels that, in accordance with WAC 173-205-050(2)(a), have a reasonable potential to cause receiving water toxicity, then the proposed permit will set a limit on the acute toxicity. The proposed permit will then require the Permittee to conduct WET testing in order to monitor for compliance with the acute toxicity limit, a chronic toxicity limit. The proposed permit also specifies the procedures the Permittee must use to come back into compliance if the limit is exceeded.

Accredited WET testing laboratories have the proper WET testing protocols, data requirements, and reporting format. Accredited laboratories are knowledgeable about WET testing and capable of calculating an NOEC, LC<sub>50</sub>, EC<sub>50</sub>, IC<sub>25</sub>, etc. All accredited labs have been provided the most recent version of the Department of Ecology Publication # WQ-R-95-80, *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria* which is referenced in the permit. Any Permittee interested in receiving a copy of this publication may call the Department of Ecology Publications Distribution Center 360-407-7472 for a copy. The Department recommends that Permittees send a copy of the acute or chronic toxicity sections(s) of their permits to their laboratory of choice.

When the WET tests during effluent characterization indicate that no reasonable potential exists to cause receiving water toxicity, the Permittee will not be given WET limits and will only be required to retest the effluent prior to application for permit renewal in order to demonstrate that toxicity has not increased in the effluent.

If the Permittee makes process or material changes which, in the Department's opinion, results in an increased potential for effluent toxicity, then the Department may require additional effluent characterization in a regulatory order, by permit modification, or in the permit renewal. Toxicity is assumed to have increased if WET testing conducted for submission with a permit application fails to meet the performance standards in WAC 173-205-020, "whole effluent toxicity performance standard". The Permittee may demonstrate to the Department that changes have not increased effluent toxicity by performing additional WET testing after the time the process or material changes have been made.

## HUMAN HEALTH

Washington's water quality standards now include 91 numeric health-based criteria that must be considered in NPDES permits. These criteria were promulgated for the state by the U.S. EPA in its National Toxics Rule (Federal Register, Volume 57, No. 246, Tuesday, December 22, 1992).

The Department technical and policy staff has discussed the issue of water quality-based effluent limitations for storm water discharges from wood treating facilities at length. A consensus has been reached within the Department that the only water quality-based effluent limitations that could be developed for discharges of storm water were those based on acute criteria. This means that no water quality-based effluent limitations will be developed based on the human health standard for inorganic arsenic (National Toxics Rule).

## SEDIMENT QUALITY

The Department has promulgated aquatic sediment standards (Chapter 173-204 WAC) to protect aquatic biota and human health. These standards state that the Department may require Permittees to evaluate the potential for the discharge to cause a violation of applicable standards (WAC 173-204-400).

The Department has determined through a review of the discharge characteristics and effluent characteristics that this discharge has no reasonable potential to violate the Sediment Management Standards.

## COMPARISON OF THE PROPOSED EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED ON JUNE 30, 1993

As was stated in the beginning of this section, Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology- or water quality-based. The most stringent limitations for each of the pollutants of those examined in this fact sheet are those based on water quality standards for the existing outfalls 001 and 002, and AKART (technology-based) for the discharge to outfall 003.

**Table 9: Comparison of Proposed Limitations with Existing Limitations – Outfalls 001 and 002, Discharge to the Gibbons Creek Remnant Channel**

Parameter, (units)	Existing Interim Limitations		Existing Final Limitations		Proposed Interim Limitations		Proposed Final Limitations
	Outfall 001	Outfall 002	Outfall 001	Outfall 002	Outfall 001	Outfall 002	Outfall 001
Oil & Grease, (mg/L)	10	10	10	10	10	10	10
Arsenic, (µg/L)	360	360	360	360	340	340	340
Chromium, (µg/L)	1030	1030	16	16	770	460	605
Copper, (µg/L)	540	540	18	18	280	240	36
TSS, (mg/L)	none	none	none	none	80	80	80
pH, (Standard Units)	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9
Chromium, hexavalent, (µg/L)	N/A	N/A	N/A	N/A	N/A	N/A	48



The proposed outfall 003 does not exist yet so a comparison with existing limitations is not directly possible. The comparison with existing limitations and the subsequent derivation of the proposed limitations was done in the section on technology-based limitations.

**Table 10: Proposed Limitations for Outfall 003, Discharge to the Columbia River**

Parameter	Existing Limits	Proposed Limits
Arsenic (µg/L)	N/A	340
Chromium (µg/L)	N/A	605
Copper (µg/L)	N/A	254
TSS (mg/L)	N/A	80
Oil and Grease (mg/L)	N/A	10
pH (standard units)	N/A	within 6 to 9

### MONITORING REQUIREMENTS

Monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies account for the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

Total flow shall be estimated for each outfall sampled based upon rainfall measurements or estimates, storm water collection area and an estimate of the runoff coefficient of the drainage area for each storm event that is sampled.

The storm water sampling frequency for all treated product storage areas shall be once per month for the months of September through May (nine samples per season). All samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches in magnitude and that occurs at least 48 hours from the previously measurable (greater than 0.1 inches of rainfall) storm event. The grab sample shall be taken during the first 60 minutes of the storm event. If the collection of a grab sample is impractical within the first 60 minutes of a rainfall event, a grab sample can be taken during the first two hours instead. When this happens, the Permittee shall submit a description of why a grab sample was not possible during the first hour with the monitoring report.

If the Permittee is unable to collect a sample due to insufficient rainfall or due to adverse climatic conditions, the Permittee shall submit in lieu of sampling data an explanation of why samples were not collected. An adverse climatic condition that may prohibit the collection of samples includes weather conditions that create dangerous conditions for human beings or otherwise makes collection of a sample impracticable.

The Permittee will be required to sample the influent and effluent of the developmental treatment system in order to characterize the performance of the system. The Department expects the permittee to sample the influent and effluent for all storm events, but not to exceed 1 monitoring event per week, that are treated with the system, and that weather conditions will allow the permittee to treat multiple storm events each month. Testing during one wet weather season should provide adequate data to evaluate the feasibility of the treatment system. The data should be adequate to support a final decision to construct and implement a full scale treatment system.

## **OTHER PERMIT CONDITIONS**

### *REPORTING AND RECORDKEEPING*

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 173-220-210).

### *SPILL PLAN*

The Department has determined that the Permittee stores a quantity of chemicals that have the potential to cause water pollution if accidentally released. the Department has the authority to require the Permittee to develop best management plans to prevent this accidental release under section 402(a)(1) of the Federal Water Pollution Control Act (FWPCA) and RCW 90.48.080.

The Permittee has developed a plan for preventing the accidental release of pollutants to state waters and for minimizing damages if such a spill occurs. The proposed permit requires the Permittee to update this plan and submit it to the Department.

### *GENERAL CONDITIONS*

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual industrial NPDES permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G6 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Conditions G7 and G8 relate to permit renewal and transfer. Condition G9 requires the Permittee to control its production in order to maintain compliance with its permit. Condition G10 prohibits the reintroduction of removed substances back into the effluent. Condition G11 states that the Department will modify or revoke and reissue the permit to conform to more stringent toxic effluent standards or prohibitions. Condition G12 incorporates by reference all other requirements of 40 CFR 122.41 and 122.42. Condition G13 notifies the Permittee that additional monitoring requirements may be established by the Department. Condition G14 requires the payment of permit fees. Condition G15 describes the penalties for violating permit conditions.

## **PERMIT ISSUANCE PROCEDURES**

### *PERMIT MODIFICATIONS*

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards for Surface Waters, Sediment Quality Standards, or Water Quality Standards for Ground Waters, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit because of new or amended state or federal regulations.

*RECOMMENDATION FOR PERMIT ISSUANCE*

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit have a duration not to exceed June 30, 2003, the end of the permit cycle for Basin 5. The Department normally proposes to issue permits for the regulatory maximum duration of five years, but the Department is trying to get all of the permits in Basin 5 to have the same issuance and expiration date. This permit is proposed to have a shorter than normal initial duration, and then be reissued by June 30, 2003, for a normal duration of five years.

**REFERENCES FOR TEXT AND APPENDICES**

Environmental Protection Agency (EPA)

- 1992. National Toxics Rule. Federal Register, V. 57, No. 246, Tuesday, December 22, 1992.
- 1991. Technical Support Document for Water Quality-based Toxics Control. EPA/505/2-90-001.
- 1988. Technical Guidance on Supplementary Stream Design Conditions for Steady State Modeling. USEPA Office of Water, Washington, D.C.
- 1985. Water Quality Assessment: A Screening Procedure for Toxic and Conventional Pollutants in Surface and Ground Water. EPA/600/6-85/002a.
- 1983. Water Quality Standards Handbook. USEPA Office of Water, Washington, D.C. Tsivoglou, E.C., and J.R. Wallace.
- 1972. Characterization of Stream Reaeration Capacity. EPA-R3-72-012. (Cited in EPA 1985 op.cit.)

Washington State Department of Ecology.

- 1994. Permit Writer's Manual. Publication Number 92-109

## APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page 1 of this fact sheet. The permit contains conditions and effluent limitations, which are described in the fact sheet.

Public notice of application was published on September 5, 1999, and September 12, 1999, in the *Columbian* newspaper to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) on December 12, 2000, in the *Camas-Washougal Post* newspaper to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator  
Department of Ecology  
Southwest Regional Office  
P.O. Box 47775  
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

Comments should reference specific text followed by proposed modification or concern when possible. Comments may address technical issues, accuracy and completeness of information, the scope of the facility's proposed coverage, adequacy of environmental protection, permit conditions, or any other concern that would result from issuance of this permit.

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6280, or by writing to the address listed above.

## APPENDIX B--GLOSSARY

**Acute Toxicity**--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

**AKART**-- An acronym for "all known, available, and reasonable methods of treatment".

**Ambient Water Quality**--The existing environmental condition of the water in a receiving water body.

**Ammonia**--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

**Average Monthly Discharge Limitation** --The average of the measured values obtained over a calendar month's time.

**Best Management Practices (BMPs)**--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the state. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

**BOD<sub>5</sub>**--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD<sub>5</sub> is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

**Bypass**--The intentional diversion of waste streams from any portion of a treatment facility.

**Chlorine**--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

**Chronic Toxicity**--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

**Clean Water Act (CWA)**--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

**Compliance Inspection - Without Sampling**--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

**Compliance Inspection - With Sampling**--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

**Composite Sample**--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

**Construction Activity**--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

**Continuous Monitoring** --Uninterrupted, unless otherwise noted in the permit.

**Critical Condition**--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

**Dilution Factor**--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the percent effluent fraction e.g., a dilution factor of 10 means the effluent comprises 10% by volume and the receiving water 90%.

**Engineering Report**--A document that thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

**Fecal Coliform Bacteria**--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

**Grab Sample**--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

**Industrial Wastewater**--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

**Major Facility**--A facility discharging to surface water with an EPA rating score of > 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Maximum Daily Discharge Limitation**--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

**Method Detection Level (MDL)**--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

**Minor Facility**--A facility discharging to surface water with an EPA rating score of < 80 points based on such factors as flow volume, toxic pollutant potential, and public health impact.

**Mixing Zone**--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

**National Pollutant Discharge Elimination System (NPDES)**--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the state of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington state permit writers are joint NPDES/State permits issued under both state and federal laws.

**pH**--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

**Quantitation Level (QL)**-- A calculated value five times the MDL (method detection level).

**Responsible Corporate Officer**-- A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation, or the manager of one or more manufacturing, production, or operating facilities employing more than 250 persons or have gross annual sales or expenditures exceeding \$25 million (in second quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures (40 CFR 122.22).

**Technology-based Effluent Limit**--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

**Total Suspended Solids (TSS)**--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

**State Waters**--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

**Stormwater**--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

**Upset**--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

**Water Quality-based Effluent Limit**--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

## APPENDIX C--TECHNICAL CALCULATIONS

Several of the Excel® spreadsheet tools used to evaluate Allweather's ability to meet Washington state water quality standards can be found on the Department's homepage at <http://www.wa.gov/ecology/>.

### TECHNOLOGY-BASED EFFLUENT LIMITATIONS CALCULATIONS

Arsenic 001				Arsenic 002			
266	OK			101	OK		
102	OK			39	OK		
206	OK	Column1		146	OK	Column1	
88	OK			130	OK		
102	OK	Mean	191.125	65	OK	Mean	138.6129
257	OK	Standard Error	21.48395	342	OK	Standard Error	14.19728
354	OK	Median	161	133	OK	Median	135
80	OK	Mode	102	84	OK	Mode	136
191	OK	Standard Deviation	121.5316	136	OK	Standard Deviation	79.04711
211	OK	Sample Variance	14769.92	36	OK	Sample Variance	6248.445
102	OK	Kurtosis	9.503157	82	OK	Kurtosis	0.541901
111	OK	Skewness	2.520729	135	OK	Skewness	0.917743
194	OK	Range	627	76	OK	Range	306
251	OK	Minimum	77	67	OK	Minimum	36
160	OK	Maximum	704	80	OK	Maximum	342
105	OK	Sum	6116	54	OK	Sum	4297
77	OK	Count	32	52	OK	Count	31
113	OK	Confidence Level(95.0%)	43.81682	211	OK	Confidence Level(95.0%)	28.99468
157	OK			64	OK		
91	OK	3*standard deviation =		192	OK	3*standard deviation=	
80	OK		364.5947	253	OK		237.1413
279	OK			192	OK		
80	OK	std + mean	555.7197	325	OK	std + mean	375.7542
221	OK			194	OK		
704	remove	99th before	596	144	OK	99th before	337
302	OK	99th after	338	198	OK	99th after	337
162	OK			166	OK		
272	OK			74	OK		



*FACT SHEET FOR NPDES PERMIT NO. WA0040029*  
*Allweather Wood Treaters, Inc.*

Chrom. 001				Chrom. 002			
758	OK			283	OK		
189	OK			18	OK		
700	OK	<hr/> <i>Column1</i> <hr/>		107	OK	<hr/> <i>Column1</i> <hr/>	
168	OK			50	OK		
192	OK	Mean	319.125	54	OK	Mean	130.9677
198	OK	Standard Error	34.81714	358	OK	Standard Error	21.85896
354	OK	Median	252.5	67	OK	Median	97
89	OK	Mode	126	97	OK	Mode	117
522	OK	Standard Deviation	196.9555	44	OK	Standard Deviation	121.7055
403	OK	Sample Variance	38791.47	20	OK	Sample Variance	14812.23
476	OK	Kurtosis	-0.10742	68	OK	Kurtosis	2.07444
296	OK	Skewness	0.915483	474	OK	Skewness	1.697934
768	OK	Range	679	118	OK	Range	456
498	OK	Minimum	89	39	OK	Minimum	18
138	OK	Maximum	768	52	OK	Maximum	474
104	OK	Sum	10212	60	OK	Sum	4060
152	OK	Count	32	38	OK	Count	31
363	OK	Confidence Level(95.0%)	71.01007	93	OK	Confidence Level(95.0%)	44.6419
462	OK	<hr/>		126	OK	<hr/>	
214	OK	3*standard deviation=		117	OK	3*standard deviation=	
126	OK		590.8665	441	OK		365.1165
158	OK			117	OK		
126	OK	std + mean	909.9915	203	OK	std + mean	496.0843
202	OK			166	OK		
602	OK	99th before	765	53	OK	99th before	464
265	OK	99th after	765	341	OK	99th after	464
240	OK			108	OK		



*FACT SHEET FOR NPDES PERMIT NO. WA0040029*  
*Allweather Wood Treaters, Inc.*

TSS 001

16	OK		
10	OK		
72	OK	<hr/> <i>Column1</i> <hr/>	
8	OK		
28	OK	Mean	32.09375
31	OK	Standard Error	7.333551
37	OK	Median	18
9	OK	Mode	16
32	OK	Standard Deviation	41.48483
0	OK	Sample Variance	1720.991
12	OK	Kurtosis	15.2051
54	OK	Skewness	3.464644
46	OK	Range	225
16	OK	Minimum	0
59	OK	Maximum	225
16	OK	Sum	1027
18	OK	Count	32
0	OK	Confidence Level(95.0%)	14.95688
62	OK	<hr/>	
34	OK	3*standard deviation=	
6	OK		124.4545
18	OK		
6	OK	std + mean	156.5482
56	OK		
16	OK	99th before	180
5	OK	99th after	78
0	OK		

TSS 002

52	OK		
22	OK		
30	OK	<hr/> <i>Column1</i> <hr/>	
8	OK		
50	OK	Mean	32
40	OK	Standard Error	4.011811
48	OK	Median	28
71	OK	Mode	8
0	OK	Standard Deviation	22.33682
28	OK	Sample Variance	498.9333
68	OK	Kurtosis	-0.10481
48	OK	Skewness	0.724929
89	OK	Range	89
26	OK	Minimum	0
24	OK	Maximum	89
32	OK	Sum	992
8	OK	Count	31
6	OK	Confidence Level(95.0%)	8.193202
64	OK	<hr/>	
16	OK	3*standard deviation=	
28	OK		67.01045
16	OK		
42	OK	std + mean	99.01045
22	OK		
14	OK	99th before	84
8	OK	99th after	84
14	OK		

## REASONABLE POTENTIAL CALCULATIONS

		State Water Quality Standard		Max concentration at edge of...			Wasteload Achievement Percentile Occurrence Probability (in decimal)>>>>>			0.95					
	Ambient Concentration (metals as dissolved)	Acute	Chronic	Acute Mixing Zone	Chronic Mixing Zone	LIMIT REQ'D?	Probability		Max effluent conc. measured	Coeff Variation		# of samples	Multiplier	Acute Dil'n Factor	Chronic Dil'n Factor
Parameter	ug/L	ug/L	ug/L	ug/L	ug/L			Pn	ug/L	CV	s	n			
ARSENIC (total recoverable)			190	11.0	3.9	NO	0.95	0.47	354.00	0.60	0.55	4	2.59	90	300
CHROMIUM(HEX)	0.13	16	10	14.5	4.4	NO	0.95	0.47	500.00	0.60	0.55	4	2.59	90	300
CHROMIUM(TRI)	0.13	3710	120	21.9	6.7	NO	0.95	0.47	758.00	0.60	0.55	4	2.59	90	300
COPPER (total recoverable)			7.5	9.3	3.6	NO	0.95	0.47	285.00	0.60	0.55	4	2.59	90	300

This spreadsheet calculates the reasonable potential to exceed state water quality standards for a small number of samples. The procedure and calculations are done per the procedure in Technical Support Document for Water Quality-based Toxics Control, U.S. EPA, March, 1991 (EPA/505/2-90-001) on page 56. User input columns are shown with red headings. To view notes (cells with red dots) highlight the cell and press shift F2. Corrected formulas in col G and H on 2/97(GB)

### FINAL LIMITATIONS

	Units	Chromium	Copper
Existing final limitations	micrograms per liter (µg/l)	16	18
Background concentration in the City of Washougal storm sewer	µg/l	0	6
Number of samples taken		1	1
Geometric mean	µg/l	0	6
Multiplier to estimate 90th percentile		1.74	1.74
Calculated background concentration	µg/l	0	10.44
Flow dilution factor		3	3
Pollutant dilution factor		3	1.84
Dilution factor used to calculate final limitations		3	2
Proposed final limitations	µg/l	48	36

## APPENDIX D--RESPONSE TO COMMENTS

The Department of Ecology has received comments from:

1. Craig Wortman, Washington State Department of Natural Resources, on December 15, 2000
2. Neil R. Alongi, P.E., Maul Foster & Alongi, Inc., on January 10, 2001

The following is a list of received comments and Ecology response:

### **Wortman:**

*The Department of Natural Resources would like to comment on the three discharge options discussed on page 2 of the Fact Sheet for the Draft NPDES Permit mentioned above.*

*The first two options pertaining to the current discharges of their two outfalls into Gibbons creek, or the sharing of an outfall with Exterior Woods is acceptable.*

*The third option pursuing a new and separate outfall directly into the Columbia River does not meet our preferred use for the area, consequently and aquatic use authorization in that area will be rejected*

### **Ecology:**

Ecology acknowledges the above comment.

### **Action Taken:**

None

### **Alongi 1:**

*On behalf of Allweather Wood Treaters, the following factual and substantive comments are provided to Ecology on the public draft permit and fact sheet.*

(Comments regarding topographical errors are omitted in the following list of comments and Ecology response. The errors have been corrected.)

### **PERMIT**

#### **SECTION S7, ACUTE TOXICITY**

**Comment No. 1** – *The effluent characterization requirement section for determining whether the permittee will have an effluent limitation for acute toxicity requires a report for the first test to be submitted by May 31, 2002, and a final report by February 28, 2003. The performance of these tests is also dependent on the final installation of the stormwater treatment system. Section S10, Compliance Schedule provides for a developmental treatment system test starting in fall 2001 and lasting for 6 months. The final installation of the full scale treatment system would not occur for as much as 22 months after the effective date of the permit. Neither of the dates in S7.A. would be achievable if the stormwater treatment system is installed. The dates should be set back*

*to May 31, 2003, and February 28, 2004, to accommodate the installation of the treatment system per the requirements of S10.*

**Ecology:**

Ecology agrees with the comment that the dates should be set back.

**Action Taken:**

The dates are set back to May 31, 2003, and February 28, 2004.

**Alongi 2:**

***Comment No. 2** – The discharge of stormwater at Outfall 001 is combined with storm sewer runoff from a larger drainage area resulting in a 3:1 dilution. The point of compliance for acute WET for Outfall 001 should give due consideration to the approved available dilution. A “critical sample concentration” should be established based on the available dilution in lieu of the ACEC. It is questionable whether an acute WET effluent limit can be assigned under these circumstances.*

**Ecology:**

Ecology agrees with the comment that the 3:1 dilution should be considered when setting ACEC for Outfall 001.

**Action Taken:**

ACEC for Outfall 001 is changed to 33% effluent.

**Alongi 3:**

***Comment No. 3** – If the determination of whether there is an effluent limitation for acute toxicity is only based on the results of the 100% effluent, the dilution series to determine the LC<sub>50</sub> should not be required of the permittee. Only the 100% effluent and a control sample are necessary to determine whether the effluent limit applies. The other testing is not considered in this determination and should be deleted from the permit.*

**Ecology:**

Comment assumes 100% effluent for Outfall 001, however ACEC was changed to 33% effluent for Outfall 001 due to comment no. 2.

**Action Taken:**

None

**Alongi 4:**

***Comment No. 4** – Section E. should be dropped since the permit period of 2.5 years does not allow a second set of tests to be run prior to submission of the application for permit renewal.*

**Ecology:**

Ecology agrees with the comment that Section S7.E. should be dropped.

**Action Taken:**

Section S7.E. is removed from the permit.

**Alongi 5:**

***SECTION S10, COMPLIANCE SCHEDULE***

*Allweather intends to proceed with the developmental treatment system operation this fall and is hopeful that its operation will be a success. The development of new technology for the treatment of stormwater will be a significant benefit for the environment over discharge without treatment. Allweather would like to request that, should the developmental system come within 90% of the needed treatment efficiencies by the end of the 6 month period, they be allowed an additional rainy season to continue the testing and modification of the system in order for its full implementation.*

**Ecology:**

Ecology does not accept the request at this time, however this does not prevent Allweather Wood from a submittal of the request for Ecology evaluation after the 6 month period of testing is over.

**Action Taken:**

None

**Alongi 6:**

*Allweather Wood continues to disagree with the Best Professional Judgement (BPJ) method used by Ecology to establish effluent limitations for metals and TSS. The 31-month period used for setting effluent limitations does not take into account the potential variations in production and storage of treated wood that may occur at the site in the future. The method unreasonably interferes with how Allweather can conduct its operations, for example, by limiting where Allweather can store treated wood on the site to the locations that were used during the 31-month period. This aspect could make locating the proposed treatment plant difficult by reducing the flexibility of site operations.*

**Ecology:**

If Allweather Wood violates technology base permit limits due to substantial production and/or storage increase Ecology will reevaluate the permit limits at that time. It is Exterior's responsibility to request reevaluation and to provide production, storage and discharge data.

**Action Taken:**

None